

REMARKS

Claims 1, 8, 9, 11, 12 and 14-22 are pending and stand ready for further action on the merits.

Claims 2-7, 10 and 13 have been cancelled.

Claims 1, 8, 9, and 12 have been amended for clarity.

Claims 14-15 find support in claims 9-10 as originally filed.

Claims 16-18 find support in the paragraph bridging pages 2-3 of the specification. Also, the temperature value of 120°C as appearing in claim 18 finds support in original claim 4.

Claims 19-20 find support in original claim 8.

Claim 21 finds support in page 3, lines 15-21 and in Example 4.

Claim 22 finds support in original claim 10.

No new matter has been added by way of the above-amendment.

March 15, 2006 IDS

The Examiner is respectfully requested to forward to Applicants a signed copy of the PTO/SB/08 form which was timely filed as part of the March 15, 2006 IDS.

Issues Under 35 USC § 103

Claims 1-12 are rejected under 35 USC § 103 for being unpatentable over KirschenBauer (US 2,598,269 – hereinafter referred to as D1), Jacobs (US 6,838,104 – hereinafter referred to as D2), and Robinson et al. (US 6,057,462 – hereinafter referred to as D3). Applicants respectfully traverse the rejection.

In response to Applicants' arguments appearing in pages 7-15 of the March 15, 2006 Amendment, the Examiner states:

- Examiner notes that Applicants are arguing about the references individually. It had been established by Courts that "One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." In re Keller, 642 F.2d 413, 208 SPQ 871 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). See MPEP 2145.
- No criticality of the invention is disclosed, no improvement if any from the prior art was found. Presently claimed invention is considered *prima facie* obvious over the prior art of record at the time of invention.
- For the reasons cited above and in our previous action rejection over US 2,598,269, US 6,838,104 and US 6,057,462 is maintained. (Emphasis in original).

Applicants respectfully request that the Examiner provides a more substantive response in the next communication. Applicants are trying to establish a dialogue with the Examiner regarding the features of the present invention which Applicants believe render the present invention patentable. However, as noted above, the Examiner has merely cited cases which are only tangentially related to Applicants' arguments.

The basis for Applicants' belief that the instant claims are patentable over the cited references is that the discovery of a multistep extraction process must does not involve picking and choosing steps from different references in the prior art without considering the composition of the material carried over from the previous step. This consideration of the composition of the material carried over from the previous step is fundamental to obtaining a multistep process that efficiently isolates the intended product(s).

In making the rejection, the Examiner appears to have been picking and choosing steps from different references in the prior art without considering the composition of the material carried over from the previous step. This is a classic example of improper hindsight reconstruction. Truly some hindsight is necessary in the examination process, but the line between proper and improper hindsight reconstruction would not be crossed if the Examiner had

only taken a step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made.

The Examiner states that Applicants have attacked the references individually. Applicants respectfully disagree. Applicants have merely pointed to the teachings of each of the references which the skilled artisan would have considered at the time the invention was made, i.e., the composition of the material carried over from the previous step in the processes of the individual references. These portions of the references would not be ignored by the skilled artisan as the Examiner has done.

For example, assume that an artisan is struggling to obtain an isolation process for isolating pure product. He reviews Reference X which teaches an isolation process including steps A-F and he reviews Reference Y which teaches an isolation process including steps 1-6. This artisan would not find it obvious to combine steps A, B, C, 4, 5 and 6 to obtain pure product without considering the composition of the material following steps C and 3. Unless the material following steps C and 3 are sufficiently close in identity, this skilled artisan would not believe that there is a reasonable expectation of success in obtaining pure product in a process comprising A, B, C, 4, 5 and 6.

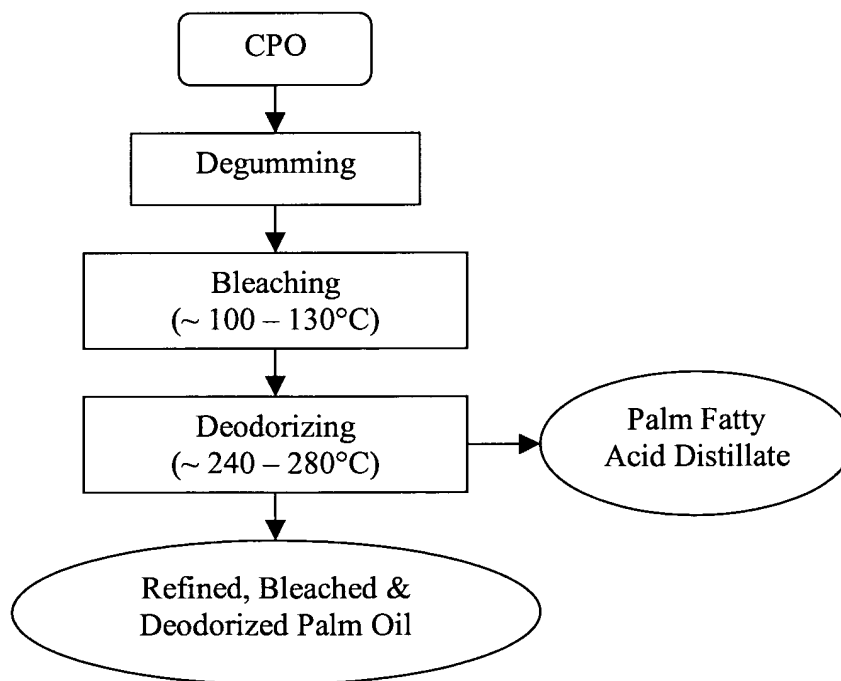
The Examiner is respectfully requested to consider the differences in the compositions at each step in the varied isolation processes of the cited references. It remains Applicants' position, that the inventive claims would not be obvious to the skilled artisan at the time the invention was made based on the cited references.

Selection of a method for isolation of phytonutrients is dependent on the composition of the starting material used. Carotenes, phytosterols, squalene and vitamin E are the four main phytonutrients available in crude palm oil (CPO). To obtain individual extracts of phytosterols, squalene and vitamin E from CPO, one major obstacle is the difficulty in separating carotenes from the other phytonutrients and another major obstacle is the difficulty in separating squalene from vitamin E.

As a starting point in overcoming the said obstacles, one would look for isolation methods available for starting material of similar composition to CPO. A person skilled in the art would not consider the isolation method of D2 (Jacobs – US 6,838,104) relevant to the problem in hand as the starting material used in D2, i.e. fatty acid distillate, is of a composition different from CPO.

Palm fatty acid distillate does not contain carotenes. The absence of carotenes in palm fatty acid distillate can be understood with reference to the refining process of CPO as shown below:

The Refining Process of CPO



The bulk of the carotenes available in CPO is removed during the bleaching stage of the refining process and residual carotenes are thermally destroyed during the deodorizing stage of

the refining process. Palm fatty acid distillate being a by-product of the deodorizing stage thus does not contain carotenes. The difficulty in separating carotenes from other phytonutrients does not exist if fatty acid distillate is used as starting material.

If the isolation method of D2 is used with crude palm oil methyl esters as the starting material, it would be expected by a person skilled in the art that crystallized sterols and a concentrate containing carotenes, squalene and vitamin E in a mixture will be obtained, instead of obtaining crystallized phytosterols and individual extracts of squalene and vitamin E.

The difficulty in separating squalene from vitamin E is totally not dealt with in any of D1 (KirchenBauer – US 2,598,269), D2 and D3 (Robinson – US 6,057,462). It has been found by the inventors of present application that distillation cannot separate squalene from vitamin E. In the isolation method of D2, squalene available in fatty acid distillate (if any) will finally be concentrated together with the tocotrienol product.

A solvent combination of hydrocarbon and alcohol is utilized by the inventors of present application to partition squalene into hydrocarbon layer and vitamin E into alcohol layer. This solution has not been mentioned in the cited documents. Please note that the solvent combination of hydrocarbon, alcohol and water used in D3 is for isolation of sterols. In the solvent combination for partition of squalene and vitamin E, the presence of water is undesirable as it will negatively affect the performance of the solvent combination in partitioning squalene and vitamin E.

It is evident that the process of present application is inventive as no teachings or any suggestion, which enable crystallized phytosterols and extracts of squalene and vitamin E to be obtained individually, is available in the cited documents even when they are viewed as a whole.

For ease of comparison, detailed flow diagrams showing the process of present application and that of D2 are enclosed herewith as Appendix A and Appendix B, respectively.

The claims have been amended to place emphasis on the step of partitioning squalene and vitamin E.

In view of the above-distinctions, Applicants urge the Examiner to reconsider the claimed invention *as a whole* in light of the combination of the references *as a whole*. For in so doing, it is believed that the Examiner will not find the present invention obvious.

Withdrawal of the rejection is respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

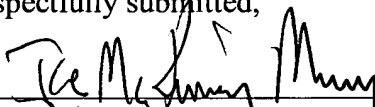
IDS

The Examiner is requested to forward a signed copy of the PTO/SB/08 form which was enclosed with the IDS which was timely filed on March 15, 2006.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq. (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Dated: October 19, 2006

Respectfully submitted,

By 

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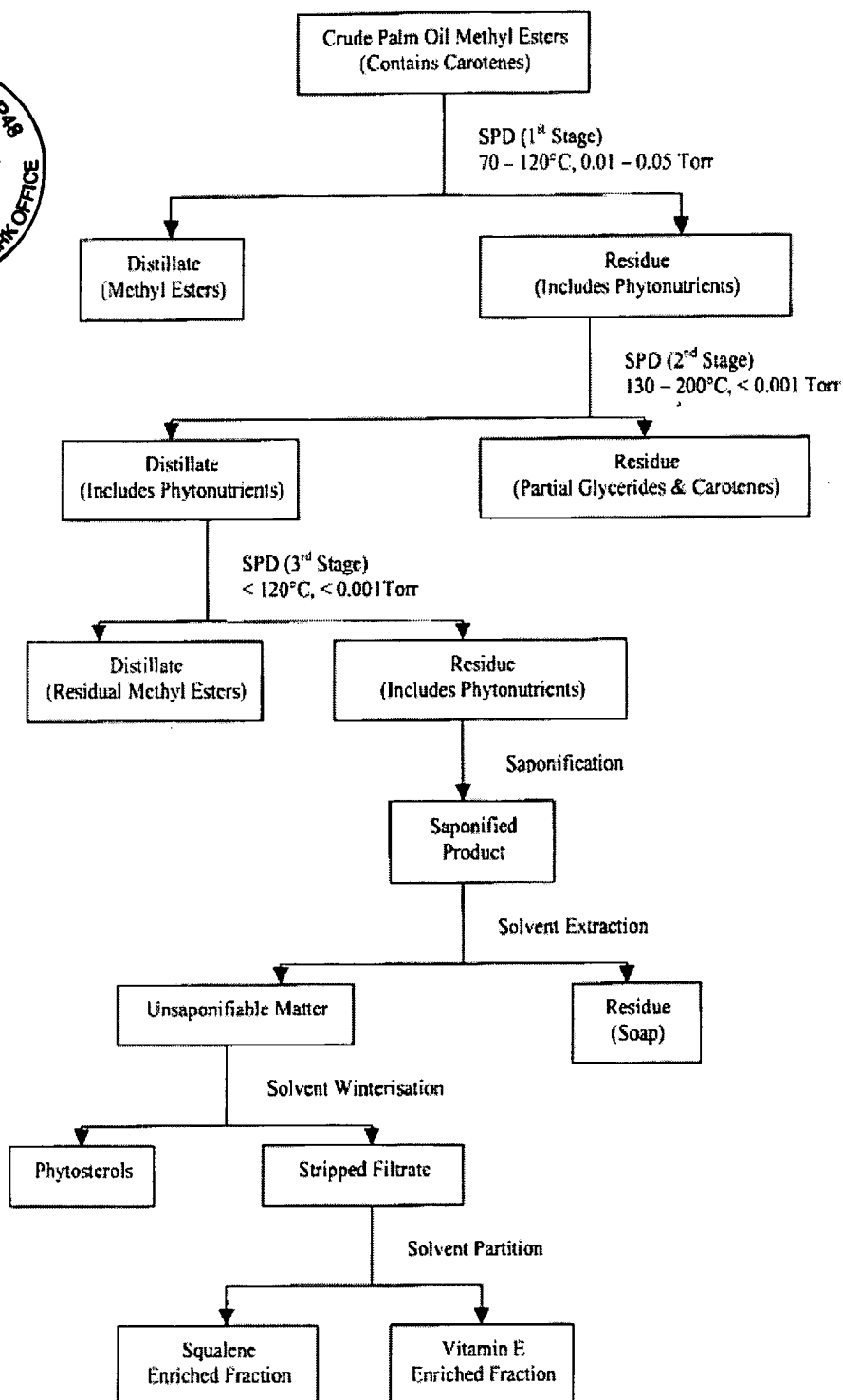
Attorney for Applicant

Attached:

Appendix A - the process of present application

Appendix B - the process of D2

APPENDIX A - The Process of Present Application



Appendix B - the process of D2

